

APPENDIX A

SAUNDERS TEXT AND REVIEW SERIES

CELLULAR AND MOLECULAR IMMUNOLOGY

THIRD EDITION

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APPENDIX: PRINCIPAL FEATURES OF KNOWN CD MOLECULES (Continued)

CD Designation	Common Synonym(s)	Molecular Structure	Main Cellular Expression	Known or Proposed Function(s)
CDw17	—	Carbohydrate epitope (lactosylceramide)	Granulocytes, macrophages, platelets	?
CD18	β chain of LFA-1 family ($\beta 2$ integrins)	95 kD; non-covalently linked to CD11a, CD11b, or CD11c	Leukocytes	See CD11a, CD11b, CD11c
CD19	B4	90 kD	Most B cells	Role in B cell activation
CD20	BJ	Heterodimer, 35 and 37 kD chains	Most or all B cells	Role in B cell activation or regulation; calcium ion channel
CD21	CR2; C3d receptor; B2	145 kD	Mature B cells	Role in B cell activation; receptor for C3d, Epstein-Barr virus
CD22	—	135 kD	B cells	Role in B cell activation
CD23	Fc ϵ RIIb	45–50 kD	Activated B cells, macrophages	Low-affinity Fc ϵ receptor, induced by IL-4; function unknown
CD24	Heat-stable antigen	Heterodimer of 38 and 41 kD chains; β 1 linked	B cells, granulocytes	Role in costimulation of T cells
CD25	IL-2 receptor α chain; TAC; p55	55 kD	Activated T and B cells; activated macrophages	Complexes with IL-2R β γ γ ; high-affinity IL-2 receptor; T cell growth
CD26	—	110 kD	Activated T and B cells, macrophages	Serine peptidase
CD27	—	Homodimer of 55 kD chains	Most T cells; some plasma cells	? Costimulation of T cells; member of TNF-R, Fas, CD40 family
CD28	Tp44	Homodimer of 44 kD chains	T cells (most CD4+, some CD8+ cells)	T cell receptor for costimulator molecule(s) B7-1, B7-2
CD29	β chain of VLA antigens (β , integrins)	130 kD; non-covalently associated with VLA α chains (CD49)	Broad	Adhesion to extracellular matrix proteins, cell-cell adhesion (see CD49)
CD30	Ki-1	105 kD	Activated T and B cells; Reed-Sternberg cells in Hodgkin's disease	? Role in activation-induced cell death; member of TNF-R family
CD31	PECAM-1; platelet gpIIa	140 kD	Platelets; monocytes, granulocytes, B cells, endothelial cells, T cells	Role in leukocyte-endothelial adhesion
CD32	Fc γ RII	~ 40 kD	Macrophages, granulocytes, B cells, eosinophils	Fc receptor for aggregated IgG; role in phagocytosis, ADCC, feedback inhibition of B cells
CD33	—	67 kD	Monocytes, myeloid progenitor cells	?
CD34	—	90 kD	Precursors of hematopoietic cells; vascular endothelium	Ligand for L-selectin

Table continued on following page

APPENDIX: PRINCIPAL FEATURES OF KNOWN CD MOLECULES (Continued)

CD Designation	Common Synonym(s)	Molecular Structure	Main Cellular Expression	Known or Proposed Function(s)
CD35	CR1; C3b receptor	Polymorphic; four forms are 190–280 kD	Granulocytes, monocytes, erythrocytes, B cells	Binding and phagocytosis of C3b-coated particles and immune complexes
CD36	Platelet gpIIb	90 kD	Monocytes, platelets	? Platelet adhesion
CD37	—	Composed of two or three 40–52 kD chains	B cells, some T cells	?
CD38	T10	45 kD	Plasma cells, thymocytes, activated T cells	?
CD39	—	78 kD	Activated B cells, NK cells, some T cells	?
CD40	—	Heterodimer of 44 and 48 kD chains	B cells, macrophages, dendritic cells, endothelial cells, epithelial cells	Role in B cell and macrophage activation induced by T cell contact; receptor for T cell CD40 ligand; member of Fas/TNF-R family
CD41	gpIIb component of gpIIb/IIIa complex (gpIIa is CD61)	Complex of gpIIb heterodimer (120 and 23 kD) and gpIIa (CD 61) (integrin)	Platelets	Platelet aggregation and activation; receptor for fibrinogen, fibronectin (binds to R-G-D sequence)
CD42a	Platelet gpIX	23 kD; forms complex with CD42b	Platelets, megakaryocytes	Platelet adhesion, binding to von Willebrand's factor
CD42b	Platelet gpIb	Dimer of 135 and 25 kD chains, forms complex with CD42a	See CD42a	See CD42a
CD43	Sialophorin	115 kD; highly sialylated	Leukocytes (except circulating B cells)	? Role in T cell activation
CD44	Pgp-1; Hermes	80–>100 kD, highly glycosylated	Leukocytes, erythrocytes	May function as homing receptor; receptor for matrix components (e.g., hyaluronate)
CD45	T200; leukocyte common antigen	Multiple isoforms, 180–220 kD	Leukocytes	Role in signal transduction (tyrosine phosphatase)
CD45R	Forms of CD45 with restricted cellular expression	CD45RO: 180 kD CD45RA: 220 kD CD45RB: 190, 205, and 220 kD isoforms	CD45RO: memory T cells CD45RA: naive T cells CD45RB: B cells, subset of T cells	See CD45
CD46	Membrane cofactor protein (MCP)	45–70 kD	Leukocytes; epithelial cells, fibroblasts	Regulation of complement activation; binds C3b and C4b
CD47	—	47–52 kD	Broad	Mediates neutrophil migration across epithelium
CD48	BLAST-1	41 kD; PI-linked	Leukocytes	?
CD49a	VLA α_1 chain	210 kD; associates with CD29 to form VLA-1 (β_1 integrin)	Activated T cells, monocytes; other connective tissue cells	Adhesion to collagen, laminin
CD49b	VLA α_2 chain; platelet gpIa	170 kD; associates with CD29 to form VLA-2 (β_1 integrin)	Platelets, activated T cells, monocytes, some B cells	Adhesion to extracellular matrix; receptor for collagen